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Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 109

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BRIEFS

THORIUM ORE FOUND--Thorium ore was found in the continental shelf at the estuary of Shoukulan River and the offshore area near Taitung City in eastern Taiwan. The discovery was made by the research ship "Chulien" of the Oceanic Research Institute of National Taiwan University recently. Professors and students explored the continental shelf there and found thorium containing monazites. This is another important discovery after the finding of the same mineral deposits in the sandbanks in southewestern Taiwan. The National Science Council (NSC) said the mineral resources there are worthy of further exploration in view of the value of thorium as an important nuclear fuel and material. It was proved by the NSC that there are about 550,000 metric tons of thorium deposits at the seashore and sandbanks of Pachang River, Putzu River and Peikang River in Chiayi County. [Text] [Taipei CHINA POST in English 9 Jul 81 p 10]

PARAGUAY URANIUM VENTURE--The Republic of China will continue exploring uranium ore in Paraguay in cooperation with South Korea and the United States, according to the Industrial Technology Research Institute. Without giving details, a spokesman for the institute described as "promising" the joint exploration efforts in the South American country. A number of spots in Paraguay may have uranium deposit and are now under careful survey by all parties concerned, the spokesman revealed. The spokesman also said that engineers and technologists are planning researches on several mountain areas in northern Taiwan in an effort to seek uranium deposits at home as a source of atomic energy for power generation. [Text] [Taipei CHINA POST in English 5 Jul 81 p 8]

CSO: 5100/4912

BRIEFS

URANIUM EXPORT FOR TECHNOLOGY--Buenos Aires, 25 Jul (TELAM)--Buenos Aires media circles are speaking about the possibility--which is being studied by National Atomic Energy Commission officials--that Argentina may start exporting concentrated uranium in exchange for receiving relevant nuclear technology. The favorable prospects for a significant growth of uranium reserves are based on the fact that only 10 percent of the Argentine territory likely to hold uranium deposits has been surveyed and on the recent discoveries made in San Rafael Department, Mendoza Province. According to reports published last April, a new layer of uranium was found in a zone near the large Sierra Pintada deposit. The discovery was made at a depth of 500 m. The probable thickness of the layer is 18 m and its purity 1,300 kg per cubic meter of rock. The specialists also believe that this deposit is part of other promising discoveries made in the region of Las Violetas Cattle Ranch beyond Los Terneros Hill. Despite the reserve maintained regarding figures, the reported data seems to indicate that the new reserves, whose volume has not yet been established, far surpass those already verified for the main Tigre 1-La Terraza deposit, which are in the neighborhood of 16,000 tons. Hypothetically, if all uranium-bearing ore of the country were exploited, the probable reserves of the country might total 400,000 tons, which would justify the decision to start exporting. [Excerpts] [PY312036 Buenos Aires TELAM in Spanish 1120 GMT 25 Jul 81]

CSO: 5100/2295

EXPERTS DISCUSS ARAB NUCLEAR POTENTIAL, BOMBED IRAQI REACTOR

London AL-MAJALLAH in Arabic No 71 20-26 Jun 81 pp 20-22

[Interview with Drs Theodore (Winkler) and Daniel (Bogan), two experts in the field of nuclear power and weapons, in London, by Ilyas Harfush; date of interview not given]

> [Text] The Israeli Raid on Tammuz.
> Two Nuclear Experts Give an Interview to AL-MAJALLAH. The Arabs Will Possess Nuclear Power by the Mid-Eighties. Iraq, After the Israeli Attack, Will Continue the Development of its Nuclear Program.
> The Middle East Runs the Risk of Having a Nuclear Confrontation in the Future.

No nation in the world has ever done what Israel did last week against the Iraqi nuclear reactor Osirak, or Tammuz, which is located in the area east of the city of Baghdad, beyond the banks of the Tigris River. The thing which has been most alarming to observers and officials in the capital cities of the Western countries, with regard to the Israeli planes' attack on a nuclear facility which enjoys the legal backing and support of the International Commission for Non-Proliferation of Nuclear Power, is the fact that this act of aggression could open up the door to acts of aggression of this type by various countries against each other. This is not very encouraging in terms of future prospects for world peace. For example, what would prevent India, in the future, from destroying the nuclear reactors in Pakistan on the pretext that Pakistan is making nuclear bombs to be dropped on Indian cities? And what would keep the two superpowers from using the same pretext as a basis for attacking the nuclear targets in each other's territory?

There are still no conclusive details about the extent of the damage which has been inflicted on Iraq's nuclear reactor. But Iraqi officials assure that Iraq, in the near future, will be able to resume the work previously engaged in [in connection with its neclear reactor].

The French also assure us that their guarantee that the Iraqi nuclear reactor will be used for peaceful purposes is based on three factors, which are as follows:

1. Iraq agreed to sign an international treaty for the non-proliferation of nuclear weapons (whereas Israel has refused to sign this treaty). Also, observers from the

International Atomic Energy Commission periodically make visits to the nuclear facilities in Baghdad. Their last visit to Baghdad was in January of this year.

2. In the nuclear cooperation agreement between Iraq and France, which began to be in effect in 1975, there is a clear stipulation which says that Iraq will return to France the uranium which has been treated with nuclear radiation in its reactor. It is a known scientific fact that this is precisely the critical stage during which uranium is transformed into plutonium (the material used to make nuclear bombs).

3. In more than 40 different countries of the world there are 70 nuclear reactors of the type which Iraq has. It is not possible to say, as Israel claims, that all of these reactors are being geared toward the production of nuclear bombs.

However, the major questions concerning this subject which continue to be the focus of interest on the part of the Arabs are: Will it be possible for the Iraqi nuclear reactor to function with the capacity which it previously had? What is the actual strength and capacity of Israeli nuclear power (which almost no one ever talks about)? What other countries in the Middle East are capable of playing a prominent role in the field of nuclear power? Was it possible to protect the Iraqi reactor against the Israeli attack? And will it be possible to protect other reactors of the same type in the future?

AL-MAJALLAH met with two experts in the field of nuclear power and weapons who work in the Institute of Strategic Studies in London. They are Drs Theodore (Winkler) and Daniel (Bogan). Each of them was interviewed concerning this important subject.

The First Interview

The first interview was with Dr Theodore (Winkler). Here is its text:

[Question] What is the actual capacity of the Iraqi nuclear reactor which was bombed by Israeli fighter planes? And what are the possibilities for using this reactor for the production of nuclear weapons in the future, as Israel claims it will be used?

[Answer] It is necessary to distinguish between two elements when dealing with the subject of Iraq's nuclear porgram. There is the short-term element, and there is also the long-term element. The Iraqis were able to obtain quantities of enriched uranium for their nuclear reactor. But these quantities of uranium are not necessarily for the production of nuclear weapons. In any case, there are doubts about how big the quantities of uranium were that Iraq obtained from France. Some reports say that they amounted to no more than 12 kilograms of uranium, and other reports say that Iraq received other shipments and that the total quantity of uranium which it received was more than 70 kilograms. For this reason it is difficult to determine the actual capacity of the Iraqi reactor. This amount of uranium, when processed, can be used to produce from 1 to 5 nuclear bombs. This of course does not mean that it was necessary to destroy the neclear reactor because the Tammuz reactor still had not reached this stage. But Israel felt that, in the long run, this reactor would constitute a danger to it. However, it is a generally known fact that reactors which utilize such large quantities of uranium, as is the case with the Iraqi reactor, are not the ideal reactors to be used for the production of plutonium

--which is the basic material used to make nuclear bombs. In all of the nuclear reactors which the various countries have today, plutonium is produced by means of natural and direct processes. It is difficult to produce uranium for military purposes by using reactors which contain very large quantities of uranium as does the Osirak reactor. In any case, Iraq did not possess the capability of producing plutonium from uranium. There remains the question about whether or not the Israeli raid destroyed the quantities of uranium which Iraq had. There is no doubt that this Israeli attack has dealt the Iraqi nuclear program a blow which will set it back by a period of from several months to several years, depending on the extent of the damage. But I do not believe that the Israeli raid succeeded in destroying Iraq's quantities of uranium because the Iraqis, according to the information which I have, had already put the uranium in underground tunnels after the attack which took place last September.

[Question] Does this mean that Iraq is still able to operate the nuclear reactor at the present time?

[Answer] I am inclined to think that the nuclear reactor did not contain a large amount of uranium when the bombing was going on. For this reason I would really be surprised if Israel succeeded in destroying all of the uranium charges which Iraq had. However, these charges need to be reused for a period of time which could be as long as several months, a year, or 2 years.

[Question] Do you have any reason to believe that Iraq was intending to pursue the production of a nuclear bomb?

[Answer] As I have said, possessing uranium is one thing but producing a nuclear bomb is something else. From the scientific point of view, the production of a nuclear bomb is a process which is both complicated and difficult. You have to carry out the processes of transformation and fission of the uranium, you have to set up the "furnace," in which the nuclear radiation is ignited, in a suitable place, and you have to know the actual amount of radiation that has to be used. All of these processes are not easy, and they cannot be carried out overnight. Even if Iraq were able to overcome all of these barriers, there would still remain the political barrier--which is a very important one. Iraq has pledged to the International Atomic Energy Commission that it will use its nuclear power for peaceful purposes. This commission has inspected the nuclear reactor in Iraq numerous times, the last time being last January, in order to make sure of this. If Iraq intended to pursue the use of its nuclear power for military purposes, this would mean a major change in the policy which it has followed up till now. I do not believe that the Iraqi government is moving in this direction. For this reason I believe that the Israeli raid was based on numerous erroneous considerations. And the result will be that Iraq, in the future, will rebuild its nuclear reactor and will continue with the development of its nuclear program.

[Question] Some observers feel that it will be difficult for Iraq to do this in the future, in view of the fact that cooperation with the new French government will not come easily. Do you believe that this factor will constitute a barrier to Iraq's nuclear program in the future?

[Answer] This is a difficult question to answer because it depends on two factors. First of all, there is the matter of how extensive the damage was which the Iraqi installations suffered. If the damage was only slight, as I believe to be the case, then the Iraqis will be in a very good position to negotiate with France and Italy. They can emphasize the fact that they have signed the treaty for non-proliferation of nuclear weapons, and they can emphasize the fact that they are utilizing their nuclear power for peaceful purposes. There is no reason for not helping them to repair the damage which has been inflicted on the reactor. But if the installations have suffered extensive damage, then the French and Italians, who are the ones who are helping in the development of the Iraqi program, will say to the Iraqis that they are prepared to repair the damage on the condition that Iraq agree to basic limitations of its nuclear program. For example, Iraq will have to agree to exchange its uranium charges for other quantities of fuel whose radiation cannot be used for the production of plutonium. France attempted to pressure Iraq into agreeing to this condition in 1979 after the Osirak reactor was damaged in France, but France failed in this endeavor. However, it is certain that President Mitterrand will be less inclined than his predecessor President Giscard d'Estaing to continue this program of cooperation--which began in the mid-seventies when Jacques Chirac was head of the government--with many different governments, the most prominent of which are Iraq and Pakistan.

Israel's Nuclear Power

[Question] What are the facts about nuclear power in Israel?

[Answer] Since the sixties Israel has been saying that it will not be the first country to introduce nuclear weapons into the Middle East. During the early seventies Israel also said that it will not be the second country to do this. It is certain that Israel's plan was based on guaranteeing that no neighboring country would mount a surprise attack on it, using nuclear weapons. Since the 1973 War Israeli authorities have been stating that they are pursuing the possession of nuclear weapons. In any case, it is difficult to judge the extent of Israel's nuclear power on the basis of statements made by its leaders. Foreign observers, including experts in the CIA, assure us that during the 1973 War Israel received unspecified quantities of nuclear weapons--possibly as many as 13 such nuclear weapons--and that they are hidden in underground tunnels. Naturally it is difficult to confirm such information because Israel will not let any international commission inspect its nuclear power [installations] or make verifications concerning Israel's purposes for possessing this nuclear power. We can be sure that Israel has reached the advanced stages in the production of nuclear weapons by using atomic energy. What this means is that even though Israel might not possess nuclear weapons now, it still possesses the scientific and technical capacity to produce them. Basically it was the French who started helping Israel in the field of nuclear power. This cooperation began with the Dimona reactor during the late fifties. This reactor became operational during the mid-sixties. Israel then developed this reactor in cooperation with French experts. There is also another reactor built by the Americans which is for the purposes of nuclear research. It is subject to international inspection, and is not intended for military purposes. Furthermore, Israel has obtained quantities of uranium from the phosphate mines in the Dead Sea area as well as from the Negev Desert. All things considered, Israel possesses a real and advanced capability in the field of production of nuclear weapons.

[Question] What other countries in the Mildle East possess nuclear power?

[Answer] As I have said, Israel, without doubt, is the country in the Middle East which is the most advanced in this field. Iraq was moving fast in the direction of the nuclear option, although it was a long way from being able to produce nuclear weapons themselves. During the mid-sixties Egypt obtained from the Soviet Union a small reactor for research which it then named "Al-Qahirah" ["Cairo"]. Egypt is now negotiating with various Western countries, including the U.S. and France, concerning furnishing Egypt with new reactors. It is clear that Egypt is not interested in producing nuclear weapons as long as there is no nuclear threat against it, particularly from Libya. Since the mid-seventies Libya has been trying to obtain nuclear bombs. There are stories which say that the head of the Libyan government, 'Abd al-Salam Jallud, went to China in 1970 and wanted to buy nuclear weapons from them, and that the Chinese authorities did not agree to this request of his. There are also other stories which say that Col Qadhdhafi is prepared to pay a billion dollars to any country which will furnish him with nuclear weapons. Although Libya signed the treaty for non-proliferation of nuclear weapons in 1975, it is still displaying interest in the aspects of nuclear technology. In 1975 it signed a nuclear cooperation treaty with the USSR which permitted it to obtain a 10-megawatt reactor for research purposes which was set up on the shore of the Mediterranean Sea and was named "Jalat." In any case, Libya has had differences with the USSR concerning the development of Libya's nuclear capability. The fact is that Libya is a long way from either producing or possessing nuclear weapons at the present time. As for cooperation between Libya and Pakistan, there is information according to which shipments of uranium have gone from Niger to Pakistan via Libya. But the two governmnnts have not taken any official positions which would indicate that there is any type of nuclear cooperation between them. In any case, even if Pakistan were to produce nuclear bombs, I do not believe that Libya would succeed either in obtaining such bombs or learning how to make them. Syria is a long way away from having nuclear weapons. It has two small reactors which it obtained from the USSR, but they are the smallest types of nuclear reactors. Jordan has absolutily no nuclear capability, nor does Sudan, or any other [Middle Eastern] country. During the days of the shah, Iran was developing nuclear plans for itself, but these plans came to an end with the fall of the shah and with Khomeini's takeover of the government. In the Indian Ocean area Pakistan is the most advanced country in the field of development of nuclear technology. However, it is difficult to judge how close Pakistan is to producing nuclear weapons. The American intelligence agencies estimate that Pakistan may reach this stage within from 18 months to 2 years. In 1974 India began a nuclear program for peaceful purposes, and right now there is discussion concerning developing this program. The reason for this is the fact that Pakistan has made progress in the nuclear field and India and Pakistan have traditionally been at odds with each other.

The Region Runs the Risk of Exploding

[Question] Do you believe that there is any possibility of protecting nuclear reactors in the Arab countries from any future Israeli attack such as the attack which was made on the Iraqi reactor?

[Answer] The Israeli raid proved that it is difficult to protect such reactors by using means and measures of defense which are presently available. For example, Israel has very advanced radar systems. For this reason, an attack on the Dimona reactor by Iraq or any other Arab country would be a more difficult operation than was the operation which the Israelis engaged in. This is why Saudi Arabia has asked the U.S. to give it the AWACS planes so that it could develop its capability of monitoring and protecting its air space when confronted by operations of this type. I believe that the Israeli raid will cause Saudi Arabia to increasingly urge the U.S. to give it the AWACS planes, because the prevailing feeling is that if Israel was able to hit Baghdad then it is also able to hit the Gulf area.

[Question] What do you have to say about apprehensions that the Middle East, in view of this race to possess nuclear weapons, is moving toward a nuclear confrontation in the future?

[Answer] No one can sleep easily as long as the Middle East is being supplied with nuclear power like this. It is the most tense area of the world and is full of disputes of all sorts. Of course this does not mean that nuclear war is likely to happen in the Middle East either today or tomorrow. But what could happen is that this change in Israel's tactics--that is, the bombing of nuclear installations in Arab countries which Israel feels are a danger to it--could also lead to a change in the strategy of the Arab countries and could lead them to pursue the achievement of a type of nuclear balance in relation to Israel's power. For example, I expect Saudi Arabia to help Iraq repair the damage which was inflicted on its nuclear reactor and I expect the Arabs to pursue development of their nuclear potential more than they have in the past. As for the near future, I think that by the mid-eighties the Arab countries will achieve the same level of nuclear capability which Israel possesses at the present time. Of course this will mean that the Middle East will be more likely to explode than it has been at any time in the past. Naturally the ideal solution to this dilemma is to impose international supervision over the development of nuclear power in Israel so that the Arabs will not be forced to pursue the same path [that Israel has pursued]. But, ws we know, Israel so far has refused to go along with any type of international treaties concerning the non-proliferation of nuclear weapons.

The Second Interview

The second interview was held with Dr Daniel (Bogan). Here is its text:

[Question] What is the capacity of Iraq's nuclear reactor? How extensive was the damage which it suffered?

[Answer] It is not clear how much damage the nuclear reactor suffered. As for the power of the Osirak reactor, it undoubtedly uses large quantities of uranium. If these quantities of uranium are ignited again by means of the nuclear reactor or by means of what scientists call nuclear radiation, then the uranium and plutonium can be produced again.

[Question] Does Israel also have this same nuclear power?

[Answer] It is difficult to answer questions of this sort because countries are always careful not to reveal their nuclear capabilities. The Israelis obtained their Dimona nuclear reactor from France. It is widely suspected that they have also been able to obtain the equipment necessary to operate this reactor. But Israel has always stated that it will not be the first country of the Middle East to produce nuclear weapons. This is all the detailed information that we have concerning the Israeli nuclear program.

[Question] What about the other countries in the area?

[Answer] The only country that you can be sure has nuclear weapons is the one which has conducted tests with them. First of all, we have the five large countries which possess nuclear power. Then there is India which says that its nuclear power is for peaceful purposes. There is also Pakistan. However, many people ask what the difference is between peaceful purposes and military purposes when it comes to nuclear weapons. As for the Middle East, it is not possible to say more than what has been said because every country in the area refuses to discuss its nuclear capability. Furthermore, there is no information available concerning any tests conducted by the countries of the area.

[Question] What is the difference between peaceful purposes and military purposes in the use of nuclear power?

[Answer] It is not possible to distinguish very accurately between nuclear technology for peaceful purposes and nuclear technology for military purposes. The reason for this is that the process of nuclear fission which produces either nuclear weapons or nuclear power for peaceful purposes is the same process. If this process occurs at a certain speed, then uranium will be ignited and it will be possible to utilize the radiation for peaceful purposes. But if the process takes place at a greater speed, then this will lead toward a nuclear explosion which is considered to be the basis for nuclear military power. In short, when any country obtains information concerning nuclear power, this necessarily leads to becoming familiar with the manner in which nuclear weapons are produced. But this does not necessarily mean that a country which is pursuing a nuclear program for peaceful purposes is working on the production of nuclear weapons.

[Question] Does this mean that Iraq was capable of producing nuclear weapons?

[Answer] I am not able to say whether or not Iraq was capable of this. What I did say was that any country which obtains nuclear material and which comes to possess the capability of easily engaging in the operation of nuclear fission--which makes it possible to produce nuclear weapons--is closer to being able to produce nuclear weapons than other countries are. This is why the U.S. has been concerned about such advanced technology and such sensitive [nuclear] materials being in the Middle East.

[Question] Is there any feeling or apprehension that the Middle East is moving toward the likelihood of a nuclear confrontation?

[Answer] The countries of the Middle East right now are at different stages of development with regard to the possession of nuclear power. I feel that present-day indications are not encouraging. In fact I am very worried about the latest developments. The situation in the area has become much more unsettled than it was previously because of the introduction of (OTRAG) missiles into Libya, the Israeli bombing of the Iraqi nuclear reactor, the appearance of the Iraqi Osirak reactor, and because a number of countries in the area have refused to limit themselves to receiving smaller quantities of nuclear fuel. All of these developments have been increasing the danger of the situation in the area--an area which is basically one of the most dangerous areas in the world.

[Question] In your opinion, was it possible for the Iraqis to provide effective protection for their nuclear reactor?

[Answer] I do not know. I am not able to comment on this. I do not know what kind of protection you have in mind, and I do not know whether any kind of protection was possible.

9468
CSO: 5100/4739

ISRAEL

BRIEFS

YELLOW CAKE URANIUM PRODUCTION--Uranium production will start in the near future in a plant being established in the Rotem Plain, southeast of Beersheba. The uranium to be produced from phosphoric acid, will provide half of the fuel requirements for the nuclear electric power station of the type Israel plans to build, Negev Phosphates general manager Yosef Shalit told THE JERUSALEM POST yesterday. Negev Phosphates will produce the uranium--"yellowcake"--from phosphoric acid which is a product of phosphate ore. The price of such uranium ranges from $65 to $80 a kilogram. An interministerial committee is now discussing the problems involved in uranium production. The committee includes representatives of the Atomic Energy Committee, the Energy Ministry, the Dimona Nuclear Research Reactor and Negev Phosphates. The process by which uranium will be produced from phosphates is well-known and is used in a number of countries, including the United States. The amount of uranium yielded by this technique amounts to a half kilogram for every 1,000 kilograms of raw material. [Text] [TA161054 Jerusalem THE JERUSALEM POST in English 16 Jul 81 p 1]

CSO: 5100/4744

BRIEFS

FRENCH POLICY ON RSA--Lagos, 24 Jul (AFP)--In its Friday edition, the Nigerian DAILY TIMES writes in an editorial that the accession of Socialist to power in France created new hopes for a radical change in the French foreign policy. The paper adds that whatever future changes may occur, they will apparently not affect the traditional financial interests. In this regard, the editorial thinks that Mr Francois Mitterrand's stand on the development of South Africa's nuclear force should not be very surprising. According to the paper, a sudden breach of the agreement on nuclear cooperation with South Africa would seriously affect the French economy. The sale of nuclear technology to the RSA is not strictly an ordinary economic decision, for in the first place, the purchaser has resolutely refused to sign the Nuclear Nonproliferation Treaty, which France has signed. The paper adds that in the second place, the South African Government is a repressive one and cannot enjoy the support of the majority of the population, against whose interests its action is directly directed. This is why the DAILY TIMES says it would be surprised if the French Government granted its support to apartheid. On the contrary, the paper hopes that the Socialist president will not yield to the internal and external pressure if he takes his long-term political interests into consideration. [Text] [AB241927 Paris AFP in French 1529 GMT 24 Jul 81]

CSO: 5100/4950

BRIEFS

NEW NUCLEAR PROGRAMS BOARD--Minister of Manpower and Energy Affairs F.W. de Klerk has announced that Dr J.W.L. de Villiers, chairman of the Atomic Energy Board, will be the first chairman of the newly established corporative managing board which will combine the nuclear activities of the Uranium Enrichment Corporation (UCOR) and the Atomic Energy Board. Minister de Klerk said that Dr de Villiers will for the present be assisted by three others in preparing proposals on organizational procedures and legislation on the new arrangement. The three are Dr N. Stutterheim, former deputy chairman of CSIR [Council for Scientific and Industrial Research] and a chairman of the Association of Telephone Manufacturers of South Africa, member of the National Institute of Metallurgy, and director of Murray and Roberts Holdings, the South African Inventions Development Corporation, and SOEKOR; J.A. Stegmann, managing director of SASOL; and S.J.P. du Plessis, director general of mineral and energy affairs. Also, their appointment does not mean that they will take over responsibilities of the existing management of UCOR and the Atomic Energy Board or positions of present managers in the two corporations. [Text] [Capetown DIE BURGER in Afrikaans 27 Jul 81 p 9]

CSO: 5100/4951

FRG TO PROVIDE EGYPT WITH TWO NUCLEAR PLANTS

Berlin DER TAGESSPIEGEL in German 16 Jul 81 p 1

[Article: "Bonn Plans To Deliver Two Nuclear Energy Plants--Joint Political Declaration of Intentions Planned"]

[Text] Bonn--It is expected that the FRG will provide two nuclear energy plants to Egypt. Yesterday the Foreign Ministry confirmed that foreign ministers Genscher and Ali will shortly, each in his own capital, sign a "political declaration of intentions on cooperation in the peaceful use of nuclear energy."

According to the Foreign Ministry, this cooperation consists principally in the delivery of two nuclear power plants with a total capacity of up to 2,000 megawatts, not however including the so-called sensitive breeder reaction, meaning uranium enrichment and reprocessing. Additional information from the Ministry of Research and Technology indicates that the two reactors will be of the light water type.

In their declaration of intentions, both sides are to commit themselves to observe the provisions of the Nuclear Nonproliferation Treaty, as well as the rules of membership in the International Atomic Energy Organization. The nonproliferation treaty, of which both countries are members, provides for cooperation on the peaceful use of nuclear energy, insofar as inspections by the organization are accepted.

Between now and the year 2000 Egypt plans to build eight nuclear power plants for the production of its electric power. Delivery of two nuclear power plants each has already been agreed upon in contracts with the United States and France. The proposed German-Egyptian agreement constitutes the most extensive cooperative effort to date by the FRG with an Arab country in the peaceful use of nuclear energy. The FRG and Egypt have for some years had an agreement on scientific and technological cooperation which in the nuclear area concentrates mainly upon nuclear medicine and hydrobiology.

9273
CSO: 5200/2293

FRG CONFIRMS ILLEGAL FLUORINE PLANT DELIVERY TO PAKISTAN

Frankfurt FRANKFURTER RUNDSCHAU in German 16 Jul 81 p 2

[Text] Bonn, 15 July--The Freiburg engineering firm, CES Kalthof GmbH, in delivering a fluorine plant to Pakistan, has violated the FRG's export trade law, which requires issuance of an export license for exporting nuclear facilities. According to the Federal government's reply to an inquiry by SPD deputy Harald B. Schaefer last Wednesday, the export of this facility had not been approved in Bonn. Schaefer had referred to a report in STERN magazine, according to which the engineering firm had been a major supplier for construction of an atomic bomb in Pakistan.

An inspection of export activities of the firm by the FRG Ministry for Economics, conducted by the Freiburg inland revenue office, is said to have shown that a fluorine plant had been exported to Pakistan. This facility is said to be suitable for the production of uranium hexafluoride, a basic compound used in uranium enrichment. According to the STERN report, gasiform uranium hexafluoride can also be used for the production of U-235, as used in atomic bombs. Plans for the construction of the enrichment facility are said to have been stolen in Holland years ago; the uranium is said to have come from Niger.

9273
CSO: 5100/2293

PROBLEM OF NUCLEAR WASTE REPROCESSING ADDRESSED

Paris CEA NOTES D'INFORMATION in French May 81 pp 3-8

[Presentation given by Andre Gauvenet, main director of protection of Security of the Atomic Energy Commission, at "Nuclear Days," organized by the German Atom Forum on 22 March 1981 in Dusseldorf.]

[Excerpts] The problem of reprocessing was addressed in France as early as in the 1952 5-year plan. At that time the decision was made in France as elsewhere--it had been made somewhat earlier in the United Kingdom--to reprocess natural uranium-based fuel from graphite-gas reactors (Magnox type in Great Britain) in order to extract plutonium, a rich fissile material. At that time, there was in France no uranium isotope separation plant. In Great Britain, the existing plant was dedicated to serving the needs of the military.

Nuclear waste was certainly taken into consideration even at that time, and the Marcoule plant had the capability of storing fission products in double-walled stainless steel containers, as was done in Great Britain. Studies on vitrification of wastes began in 1967 at the Marcoule plant, upon the initiative of a St-Gobain/AEC (Atomic Energy Commission) team. Immersion in the ocean was being considered for low-level wastes. An immersion experiment was to take place in the Mediterrannean in 1961. It could not take place because of immediate opposition.

Reprocessing was therefore a well-established principle. The beginning of the fast-neutron reactor program (1957), the first signs of an important nuclear program (let us recall the report from the Euratom sages in 1957) confirmed this determination. Although significant, the French uranium reserves were considered insufficient to satisfy the needs of an important nuclear program. The development of the breeder, and therefore plutonium separation, seemed ultimately assured.

The problem of whether or not to reprocess nuclear waste has raised itself more acutely over the last few years, and particularly during President Carter's term of office. Every country has investigated this question, particularly within the scope of the INFCE [International Nuclear Fuel Cycle Evaluation]. I will not dwell upon the conclusions of this study which are well known: I will, however, mention that from the non-proliferation standpoint the pros and cons of the various nuclear fuel cycles, including the interrupted cycle (no-reprocessing), have seemed to be equivalent. The realization of the long term problems connected with reprocessing waste dates back from before the INFCE. It resulted in considerable activity, particularly on the international level. I will cite in particular the reports from the Nuclear Energy Agency of the OECO [Organization for Economic Cooperation and Development] and especially the latest one: the Polvani report. Although it can certainly be stated that, from the standpoint of safety, non-reprocessed irradiated fuels can be stored for long periods of time in acceptable conditions, it seems to us that storing wastes after reprocessing offers various advantages:

Without the presence of plutonium, radioactive isotopes present in the waste materials exhibit a specific radioactivity comparable to that in the earth's crust for activities of the same nature and the same importance. This admittedly approximate reasoning no longer holds when all the plutonium produced in the reactor is present in the waste. Furthermore, and this seems more important to me, burying irradiated fuel, even at great depths, constitutes a plutonium mine which could arouse greed. The problem of the security of long-term storage could thus become more acute, since intrusion in storage areas could no longer be considered fortuitous.

Considerations of this nature have led to the position taken in France, and have probably reinforced the position of specialists in other countries, especially in Europe. Having established this general principle, the French policy has developed progressively and pragmatically in a manner I will now describe.

General Problems and Regulation Problems

The principle of reprocessing, of the use of plutonium and the management of waste, having been established for many years, it is interesting to study first the regulation problems and the related technical/administrative measures.

Fuel reprocessing, processing, and waste storage centers have been authorized, since 1963, according to a very strict procedure. he organization concerned with waste and safety has been established progressively since that time. In 1963, the decree on Basic Nuclear Installations, which defines them and establishes the authorization procedure, was passed. This text has been somewhat modified 10 years later. It is very important to note that, within the scope of this regulation and above a certain threshhold which is almost always passed, waste storage and processing installations have been considered from the start as Basic Nuclear Installations and treated in the same strict manner as nuclear reactors or plants, which has not always been the case in other countries, where regulations and procedures were often less strict than in the case of power plants. Decisions were often made by local authorities rather than a more or less centralized one.

I remind you that the Central Office for the Safety of Nuclear Installations was created between 1972 and 1980. It was immediately involved in waste problems as a result of the decrees. The creation of the multi-ministry commission responsible for nuclear safety problems, and the creation within the AEC, in cooperation with the National Regulation Agency, of the Protection and Nuclear Safety Institute, followed. The ANDRA [National Agency for Managing Radioactive Waste], a state organization responsible for the management of radioactive wastes, was organized in 1979.

In France, there is no regulation or law forcing the owners of nuclear installations to provide facilities for the reprocessing and storage of wastes, or for the storage of irradiated fuel. Such laws exist in Sweden, Switzerland, and Germany. In France as in Great Britain, most owners of nuclear installations are public organizations, that is to say the government in an indirect manner. This fact is obviously taken into consideration in regulations. Safety organizations have partners which are not dispersed and are easy to control. In the case of nuclear power plants in particular, the Electricity of France, a state organization, is the sole owner.

In theory at least, there is nothing forcing producers to deliver their waste materials to ANDRA which, although it is responsible for the long term management, has no monopoly. This is due to the reasons explained above: the organizations involved are almost always public, if we set aside the small producers of wastes (hospitals, laboratores, etc). Considering the contractual relations which exist between the owners and the safety organizations, it is obvious that it is impossible to dispose of wastes in storage facilities without control. In the last 17 years, storage has been the object of a very strict procedure and, in most cases, there is no possibility of on-site storage for extended periods. These particularities therefore result in a de facto ANDRA monopoly.

These remarks are intended to underline the flexibility of French regulatory measures which sometimes prompt people outside of France to state that there are no nuclear laws in our country. Technically this is true but in fact, the existing regulations constitute an important body of texts which have the force of laws. It is a very flexible set of decrees and ordinances which are often considered within the framework of the existing laws. It is in fact a characteristic of the French system that in most cases, new regulations are molded within the framework of existing ones. This method has generally seemed simpler all along our legal history. Every ministry department has its own function that it has not seemed necessary to modify extensively. The gathering of protection and safety bodies within a single state organization has rarely been complete in those countries where it was attempted. In France, we deliberately took the opposite course by organizing an overall cooperation and by modifying, and sometimes adding to the existing structures by providing new texts.

Importance of the reprocessing and waste management problems in France [sic]. This importance results from the extent of the nuclear program: about five new power plants are started every year, and five are also completed every year, since we are now in an equilibrium period. The problem of waste storage and reprocessing is first of all a technical problem. The principles we are going to discuss can, in our opinion, give satisfactory solutions to the problems that exist, but it is also necessary to take into consideration the political and psychological problems. Psychologists believe that the word waste carries a negative connotation in the public's mind, and perhaps also in the minds of the responsible engineers. Naturally, these psychological problems have an influence on the time required to obtain approval on a site, once the technique has been established. These problems may even influence the choice between various options.

It has taken a long time for an awareness of these problems to take place. The question was certainly considered 10 to 12 years ago, but there was no real consciousness of the long term problems. It is true that the nuclear industry was not highly developed then. On the other hand, too often today there is a tendency to exaggerate certain problems. The technical community itself is not immune from these tendencies. We believe that it is absolutely necessary to place the problems of wastes in perspective and to address them by comparing them either with natural radiations, or with the waste problems arising from non-nuclear energy production methods (coal for instance).

Basic Principles of the French Policy on Waste Materials

They are not very different from those adopted in other countries, but a few characteristics related to the national policy should be noted.

Pre-Storage Operations

First of all, waste materials must be sorted at the production site. The first precept of the waste policy is that good quality sorting must take place. The operations which may take place are: a recycling of alpha radiators, volume reduction (in principle), waste processing, and finally conditioning, that is coating the waste materials and packing them in suitable containers. There must, of course, be some control at all stages.

The first of these operations takes place mostly at the production site itself. The last ones (coating and packing in containers) may take place at the storage site or in specialized centers.

Products not initially in solid form (for instance slurries) are always transformed into solids. Sorting assumes that the various categories of wastes are well-defined and particularly, that the threshold above which a product is considered radioactive be well defined. Sorting assumes the availability of methods of detection and control which are not always adequate at the present time, but are being perfected.

Storage

There are some well-known cases where the storage problem has been resolved, and others where it has not.

The objective of waste management is the storage of wastes in satisfactory conditions, but it can take several forms depending upon their nature. While the ultimate goal is permanent storage, it is possible and often necessary to go through temporary storage stages. Deep storage is planned for alpha wastes as for vitrified wastes. The storage depth may vary according to the level of radioactivity.

Category 1: "Beta-Gamma" Wastes Without Alpha Radiators

How can "no alpha" storage be defined? From the basic principles of our policy, by examining the storage sites and by studying the capacity of each site for beta-gammas and alphas. If a given site receives a majority of beta-gamma wastes with a maximum period of 30 years, it may be de-controlled after the active period, followed by a 200 to 300-year supervision period. The level of alpha radiation at the site should not prevent de-control.

Studies are therefore conducted for each site, so that de-control without reservation may be attained. This means that bulldozers may be put to work at the site to erect buildings or build roads, thus placing ground surface particles in suspension in the air. This also means that the flow of water should create no significant problem for the population. The studies thus determine the level above which a given waste material may be considered as containing alpha radiators. Below this level, it may be assumed that there are no alpha radiators in the wastes.

We now have a permanent storage site for beta-gamma radio-isotopes: the Channel site. Wastes are placed on the surface or under the surface at shallow depth. Clear specifications approved by the responsible safety organizations define the content of the blocs or drums as well as coatings and containers. The tolerated level of alpha products may depend somewhat upon the coating. A second site is being planned in the Forez region. In a first step, this site will be opened in a quarry located in the old Forez mine, managed until now by COGEMA [Nuclear Materials General Company]. This storage will be in an abandoned strip mine. The authorization procedure has now begun. A second phase being planned could result in storage in mine galeries, if results from the study are positive.

In the first case (storage in a quarry), the safety report is being studied. The study, which has almost been completed, should result in a determination of the maximum allowable level of alpha radiations. The same will happen for the second phase, where the two possibilities I mentioned earlier will be considered differently from the surface-storage case. The water problem remains just about the same, but at a depth of 50 meters, particles in suspension in the air are no longer a problem. The alpha level authorized by the safety organizations, based on ANDRA's proposal, will therefore be different. In this first category can be found preliminary storage sites at the production facilities. They may consist in storage sites used before departure to the permanent site, or holding sites used to allow a decrease in radioactivity in the case of short period products, in order to limit workers' exposure. Current problems are therefore: the determination of standards for each site, coating standards, and the preparation of procedures. Some of the problems have been resolved, others are still being studied.

Category 2: Low and Medium Level Alpha Radiators (Above the Threshold)

This category varies depending upon the threshold, since it may vary depending upon the site. The levels do not vary by considerable amounts, but it should be noted that the 30,000 to 70,000 m^3 which will be accumulated by the year 2000 are waste materials whose activity by volume is close to the thresholds which are generally considered. In other words, depending upon whether the threshold is high in a favorable site, or lower in a less favorable one, it will be possible to store wastes with higher or lower levels of alpha activity. As I mentioned, this threshold is dependent upon the nature of the coating, which gives additional flexibility. The particular case of irradiated wastes may create conditioning problems. It is not as easy to apply a coating to irradiated waste as non-irradiating waste, and it is not as easily transported.

At the present time, techniques are well known, and they are being perfected every day. The blocking factor is not the technique, but the site selection. There is still no permanent site for these types of wastes; all are stored temporarily at the production sites, and our policy is in selecting a number of these temporary centers, to pick those with the best capabilities, in order to consolidate these holding sites. They are planned for a determined duration of about 20 years.

Category 3: Highly Radioactive Wastes: 2000 m^3 in the Year 2000; This is Not a Large Volume

At the present time, the decision has been made in France to vitrify this type of waste material. This is a decision which has not been made elsewhere; others prefer to wait while hoping for a better process. It is currently being confirmed that vitrification is one of the best applicable processes, if not the best. Vitrified fission products are presently being stored on site at Marcoule, and the same will happen at the Hague where a vitrification facility is planned. Storage of this type of waste material is done in a very safe manner after the vitrified materials are cooled, and their volume is not large. The permanent solution is being studied as a choice between several possibilities. I will discuss the two main ones.

Waste materials may remain on the production site while the beta-gamma radiations decrease sufficiently. Beta-gamma radioactivity present some problems with respect to permanent storage, because the temperature reached by the glass may cause a reaction within the material, which is not the case for other types of wastes. This period of decrease in radioactivity and cooling may last several decades. But this waiting period could also take place on the permanent storage site, providing the wastes are cooled for an adequate period of time. Storage of these types of materials should be planned at depths of 500 to 1000 m. This question was the object of the Swedish safety report "KBS," which was a very valuable and original project. It describes deep storage of this type as possible so that no significant detrimental consequences for the environment may take place, particularly for the population, even in the distant future. As always for questions related to the nuclear industry, safety rests upon the existence of successive barriers blocking the spread of radioactivity to the environment, and therefore mankind. Artificial barriers (glass and container) last for a limited amount of time. On the other hand, geological barriers are active for a very long time. They include the materials placed around the containers, and the geology itself, including the depth effect. In the long term, there is a slow and controlled diffusion of the products, without significant consequences for the environment.

A well-known characteristic of radioactive products with a long period is that their specific activity is low, since at the atomic mass of radium or plutonium, this activity is inversely proportional to the period. This is the reason why permanent solutions may be found while respecting safety conditions. This peculiarity is not well known of the general public. After decrease in the beta-gamma radiation, the residual alpha radiation is in fact no higher than the natural radioactivity which may be found in the earth's crust. Therefore, after the few hundred years required for the beta-gamma radiations to decrease significantly, the level of alpha radiation is equivalent to the natural radiation in the earth's crust. This gives the scale of the problem. These principles must be applied in several steps, with the understanding that there is no need to rush to early implementation: it is desirable to benefit from scientific and technical breakthroughts which will not fail to take place in the future. On the other hand, it is essential to put together right now a complete file, including demonstrations and safety criteria, concerning the reference solution which, in France, consists in deep storage in granite formations. Such a demonstration implies:

1. Basic studies including in particular drillings down to 1000 m and studies of the rock formations encountered. The first drilling of this type was performed in 1980, and the corresponding studies are being completed now. A technical and economic study is being performed in order to chose between the various solutions described previously for the cooling of glass materials.

2. A storage demonstration which could take place within about 10 years.

3. A search for favorable sites which will follow the first two phases and should result in the selection of a site and the beginning of the corresponding administrative procedure.

At this stage, there will be nothing to prevent taking into consideration basic studies conducted in parallel, particularly within the scope of international cooperation, on rock formations other than granite (schiste, salt, clay, etc) and on storage on the ocean floor.

Observations Concerning the Principles Discussed

It is necessary to take into account at all times the total cost of waste management since the consideration of partial costs only could result in not undertaking necessary operations which would appear needlessly costly. This overall view of the economy of the wastes cycle seems very important to me.

An overall view has not always been taken in the past; this is the reason why the economic study was insufficient. It is also obvious that even now everything is not known and that it is necessary to make some approximations. It also seems important to make them right now. A method which does not seem interesting at the present time may become essential when the total cost, including anticipated cost of permanent and temporary storage, is taken into consideration. The recycling of alpha products I was talking about before and problems concerning incineration used to reduce the volume of the materials sometimes fall within this "economically incomplete" category. Another problem related to these financial calculations arises: where can the money for permanent storage be found?

For the more or less long term, the problem is somewhat like the retirement system where it is necessary to decide whether to operate with the capitalization method where money is set aside and invested, or with the distribution system. In France, from a practical standpoint, we have chosen the distribution system, which means that money is not set aside because of all the problems this implies, but money is collected either from the producers or from the government as it is needed. The long term will be treated in the same manner.

In all waste processing problems, it is necessary to pay careful attention to what some of us call the risk of breeding wastes. A given operation may seem very tempting, but it is possible that all the resulting wastes have not been anticipated initially. It is possible that while solving a solid waste disposal problem, liquid wastes may be produced in non-negligible quantities, which negates the advantages of the operation. It is extremely important to apply the "risk/benefit" study system officially promoted by many organizations, including the International Commission for Radiation Protection, to the problem of waste materials. It may happen that while reducing the amounts of radiation for the population, the amounts may be increased for workers. This is the case when waste materials are stored for extended periods at the production site. Considerations such as this may influence the choice.

As far as coating and conditioning of the waste materials is concerned, the management as well as ourselves require a standardization within the framework delineated by safety organizations and resulting in procedure books. This is dependent upon future storage, which means that a dialog takes place between producing and storing organizations, which is very important since some of the barriers (one or two in general) are the result of coating and processing before storage. As I mentioned, this requires an important and necessary link with the medium-term storage management. Finally, within this general framework, I would like to refer to the extreme interdependence of the various organizations. It is obvious that as far as waste problems are concerned, it is not possible to consider research and its application independently. Good coordination is necessary.

I would like to insist upon two points which have been mentioned previously. Whereas the problem of wastes does not now have a complete solution, it is nevertheless quite advanced technically. This conclusion has also been reached by the OECD, as well as by the DOE in the United States (a recent report by the DOE on the international status of the waste problem insists upon this point). As far as studies are concerned, two categories may be defined:

a. The problem of "artificial internal barriers," which is very important since, for a period of time, safety rests mainly upon the quality of the artificial barriers. These studies, and the establishment of procedure books is therefore quite important. At the AEC, we have a laboratory which may be used by all to study this problem. I have previously mentioned "artificial external barriers" which are placed around containers containing vitrified materials. We believe that these barriers should not be made up of precious metals (for instance titanium) or even only common metals such as copper, because of the risk of turning the storage site into a potential mine which may be the object of greed as would be the case if plutonium was not extracted.

b. As far as storage is concerned, many studies must be carried out. We have a program of studies followed by experimental evaluations of permanent solutions to high radioactivity problems, but the main problems are the psychological and political problems.

On the other hand, the studies I refer to are not only directed at geological storage solutions, but also other solutions which cannot be neglected such as ocean floor storage. For low-level radioactivity, waste immersion had been practiced in France several years ago. This solution may be excellent, and even better than surface storage from the standpoint of the optimization of the amounts of radiation in some cases.

Site studies have naturally been conducted in parallel with all these general studies. We must also insist upon the currently very fruitful international effort conducted by the International Atomic Energy Agency, the European Community, and the OECO through its Nuclear Agency. The last point I would like to raise is the necessity for conscious pragmatism in questions concerning waste materials: excessive rational thinking often takes precedence over experience. In my opinion, this pragmatism is the subject of objections from the public more than a prior rational thinking. A while ago I mentioned the problem of alpha thresholds. Wastes obviously fall into two categories of low and medium-level radioactivity, but if the question of thresholds, as determined for each site, is presented clearly, I believe the moving border between the two categories can be explained in a convincing manner.

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FRANCE

FUSION RESEARCH PROGRESS AT FONTENAY-AUX-ROSES

Paris LE MONDE in French 1 Jul 81 p 12

[Article by Jean-Francois Augereau: "Research on Thermonuclear Fusion: 20 million degrees at Fontenay-aux-Roses"]

[Text] A European team of physicists specialized in controlled thermonuclear fusion has succeeded in reaching a temperature of 20 million degrees, using the Tokamak installation at the Fontenay-aux-Roses Nuclear Studies Center. Although this may appear to the uninitiated as being less spectacular than the 60 million degrees obtained 3 years ago by an American team, it is nevertheless an important step in the control of fusion because of the conditions under which the experiment was conducted.

To create within a suitably selected medium--a deuterium and tritium plasma*--the conditions necessary to start and then sustain fusion of atom nuclei is not an easy enterprise. The plasma temperature must reach 100 million degrees, which creates serious confinement problems since a medium at such high temperature must not touch the physical walls of the equipment where it is located. Secondly, the temperature must be sustained for at least one second, and finally, the plasma density must reach 100,000 billion particles (ions) per cubic centimeter. None of the devices operating in the world today can achieve all three conditions simultaneously. Each has its own privileged area. Attempts are therefore being made to improve results, particularly in the area of plasma heating and the temperature reached in the confining cell. Four possibilities are available to scientists to reach their goal:

--The first, called resistive heating, consists in using the current present in the plasma in a tokamak. The plasma can provide energy to the electrons through the same mechanism--called Joule effect--as that used in heating the elements of an electric radiator. The electrons collide with ions, heating them and providing temperatures of about 10 million degrees.

--The second possibility is adiabatic compression. Briefly, it consists in suddenly increasing the magnetic field used to maintain the plasma at a sufficient distance from the walls of the device. There follows an extremely high compression of the plasma resulting in an increase in the temperature of the medium. This technique cannot easily be generally applied to large devices.

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*A plasma can be considered as a fourth state of matter where atom electrons and nuclei are separated and move around freely.

--The third possibility requires high speed injection of neutrons. To achieve this, hydrogen atoms are used since, being electrically neutral, they can traverse the confining magnetic field and penetrate to the heart of the plasma where they become ionized. Their kinetic energy is progressively transferred to the plasma, thus raising the temperature of the medium. This process, developed in the sixties and seventies, has allowed Princeton University scientists to reach more than 60 million degrees, but with a low plasma density.

--Finally, the fourth solution concerns radio-frequency heating of the plasma. It consists in introducing high frequency alternating currents within the plasma, with frequencies chosen according to the area where energy absorption will be the highest (resonance phenomenon). High quantities of energy can thus be transferred to the plasma.

It is in this latter area that the Fontenay-aux-Roses Tokamak team has recorded some brilliant results. Thanks to the combined efforts of the team scientists and technicians, and those of the engineers and technicians at Thomson-CSF, a high frequency heating system which has resulted in reaching 20 million degrees on 10 June 1981 was developed. This achievement is particularly important since it was obtained in plasma density conditions similar to those required in future fusion devices: 200,000 billion particles per cubic centimeter.

Work is continuing at Fontenay-aux-Roses, to complete the energy analysis of the plasma obtained and to evaluate the relative importance of the energy-loss mechanisms. The Joint European Torus (JET), a Tokamak the Europeans are building at Culham, in Great Britain, will be equipped with this system in its first operating phase*. At that time, around 1983, JET will be equipped with a resistive heating system plus an additional system providing 5 megawatts using neutral injection and 5 megawatts using a radiofrequency system. In the second step (1987-1988), this additional heating should be increased to 15 megawatts, but the contribution of the two techniques will only be determined as a function of experience obtained.

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*Power density will be less than in the Fontenay-aux-Roses Tokamak.

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ECOLOGISTS RESUME SUPERPHENIX PROTEST: COST, SAFETY, NORMS

Paris LE MATIN in French 6 Jul 81 p 14

[Article by Jean-Louis Saux: "Ecologists Resume War Against Superphenix: 4 Years After the Anti-Nuclear War on the Creys-Malville Plant, They Confirm Their Opposition to the Breeder and Invite the Minister of Energy to Visit the Site"]

[Text] Four years after several tens of thousands of anti-nuclear protesters marched on the Creys-Malville plant, and as construction progresses inexorably at the breeder site, ecologists from the Isère region have decided to go to war against superphenix. The political environment has obviously changed and for the first time a delegation, including in particular the scientist authors of the book "Plutonium on the Rhône River" (LE MATIN, 12 March), was received by the management of Mersa Company, the builder of the plant. But the leaders of FRAPNA (Rhône-Alpes Federation for the Protection of Nature) wish to influence the decisions of the new government.

After meeting with Mersa management, only a few days after the second round of the legislative elections the leaders of FRAPNA, which includes about 50 different ecology groups in the Isère region alone, consider that the case put together by the GSIEN (Group of Scientists for Information on Nuclear Energy) and laid out in the book "Plutonium on the Rhône River" has been confirmed by information they have been able to gather. From this information, they consider that the 1976 safety report is totally outdated, considering the many modifications made to the project since that time.

The ecologists are also worried by the fact that the breeder reactor has been designed to withstand earthquakes ranging up to 7 on the Richter scale, whereas 2 level 8 tremors have occurred a few kilometers from this area in the last century. They also protest the fact that EDF (French National Electrical Company) is not respecting European standards since they plan to feed water at temperatures which could be as high as 34°C into the Rhône river. From the economic standpoint, the bill for Superphenix could reach 9 billion francs (about $15 million), and could reach 15 billion francs at the end of construction.

While the Socialist party is planning to set up a control commission charged with the responsibility to authorize the start-up of the plant, FRAPNA insists on stopping work immediately. With this objective in mind, they have invited Edmond Herve, the new Energy Minister, to go to Creys-Malville in July, and are demanding the creation of a regional information access commission. FRAPNA is also planning an information weekend in the fall, for the benefit of deputies from the Isère, and expresses astonishment that the new government is still seeking the advice of those who have led the French energy policy at all levels in the past.

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